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SOURCE 1952 Jen-min Shou-ts'e, pp 344-348

METHODS USED BY 3 CHINESE FARMERS TO ACHIEVE
 HIGH RICE, WHEAT, AND CORN PRODUCTION IN 1951

[Three reports from the 1952 Jen-min Shou-ts'e, describing production methods used successfully by Chinese farmers in 1951, are summarized below. The three farmers achieved production of 1,314 catties of rice, 814 catties of wheat, and 1,266 catties of corn per mou (one mou equals one-sixth acre), respectively.]

Report on Rice Production of Farmer Li Ch'eng-kuei

(This report is based on a Hsin-hua News Agency report of 23 December 1951. It describes the methods followed by rice farmer Li Ch'eng-kuei in the selection and preparation of seed, preparation of soil, irrigation, and cultivation that resulted in his receiving an award for high production of 1,314 catties of rice per mou. The award was made after an investigation on the spot by representatives of the Department of Agriculture and Forestry and other interested agencies of the Hunan People's Provincial Government verified Li's production figures.)

Li has built up the quality of his rice seed by a long period of careful annual selection from the field before harvest. He selects a head of grain, taps it lightly, and saves only the kernels which fall off easily indicating complete maturity.

Li carries out thorough preparation of his seed bed. He plows once in the winter, and again in the spring after flooding. At this time he plows under a crop of red clover which was planted in early spring. This is followed by triple harrowing, another plowing, fertilization with 2,700 catties of night soil and soft. Seed is sown when the surface soil is dry, thus avoiding the danger of seeds rotting. Before sowing, Li mixes his seed with finely sifted coal ash and then soaks it in warm water for 48 hours until it is well sprouted before planting. He uses about 0.3 mou as a seed bed.

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After being sown, the paddies are flooded to a depth of one inch by day and the water drained off by night. After the plants are up, the depth of the water is gradually reduced to a half inch or less until transplanting time.

Li believes in early, shallow, and spare transplanting, setting his plants only about one third as thick as is the usual practice in his area. He does this to get sturdier plants with more heads and earlier ripening. Before transplanting, he applies a second lot of fertilizer made up of night soil, barnyard manure, vegetable ash, and earth.

Three days after transplanting, Li applies at the base of each plant a follow-up fertilizer consisting of cow manure and vegetable ash, in the amount of 13 piculs [$\frac{1}{1}$ picul equals 133.33 pounds] per mou. After 10 days, another cultivation is followed by an application of about two-thirds picul of lime per mou. The fields are hoed three times during the growing season.

Li believes in shallow irrigation (0.4-0.5 inch) in the early part of the season to permit absorption of the sun's heat by the soil, thus promoting rapid, sturdy plant growth. As the weather grows warmer and the plants larger, more water is required. When the plants are in bloom, the water is increased to a depth of 2 inches. It is kept at this depth until the heads are in the milky stage and beginning to hang down. The water level is then lowered to 0.3-0.4 inch, permitting the soil to absorb heat and hasten ripening. When the grain is ripe, all the water is drained off to avoid lodging of the grain in the water. However, if sun cracks appear in the soil some water will be let in. Li has, over the years, made ample technical provision for supply and control of water for his fields by means of wells, tanks, and ditches.

Li has set his 1952 goal as 1,500 catties per mou.

Report on Wheat Production of Farmer Shih An-fu

(According to a report of 23 December 1951, based on on-the-spot investigations by two Hsin-hua News Agency reporters, Shih An-fu, a farmer of Han-ch'eng Hsien, Shensi, in 1951 secured a winter wheat yield on 1.85 shih-mou [one shih-mou equals 0.1647 acres] of 814 shih-chin [one shih-chin equals 1.1 pounds], as well as a second crop of 775 shih-chin of corn per shih-mou. The reporters were accompanied by representatives of official agricultural organs on all levels from the Ministry of Agriculture down to the local authorities.)

Shih An-fu was a tenant farmer who during land reform received as his own the land he had formerly been renting on which his wheat production had theretofore been only 300 catties per mou. The land consists of two plots, of 1.43 shih-mou and .54 shih-mou respectively. He raises two crops annually, corn and winter wheat. A garden patch and irrigation ditch occupy 0.1 shih-mou, leaving 1.87 shih-mou for grain. These measurements were carefully verified by the investigators.

Shih uses the following methods in preparing his seed bed:

1. Collects all weeds and leaves and burns them to produce fertilizer ash.
2. Levels the soil by planking [dragging a plank across the land].
3. Irrigates copiously.
4. Turns the soil to a depth of 8 inches with a mattock after weeds have sprouted.
5. Does shallow plowing and applies basic fertilizer.

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6. Planks and plows again.

7. Planks again to produce a fine loose mulch surface.

After this meticulous preparation of the seed bed, he plants his wheat as follows:

1. Sows the winter wheat crop about 1 October.
2. Sows seed by hand in furrows 2 inches deep by $1\frac{1}{2}$ inches wide with 8 inches between furrows.
3. Uses 17 catties of seed per shih-mou. Covers seeds by planking.
4. Divides field into irrigation plots each 10 feet square, to conserve water and prevent washout of fertilizer.

Shih believes in liberal irrigation and plenty of fertilizer. On each shih-mou he applies 24,000 catties of various animal manures, including night soil mixed with vegetable ash and 24 catties of black bean meal. For each of the two crops raised each year, 12,000 catties of manure are applied. For the wheat crop the bean meal is applied at planting time, 6,000 catties of manure are applied after the ground freezes, and another 6,000 catties when the grain is heading in early April.

Shih irrigates once after the ground freezes in the fall; this holds the water near the surface to be available to the roots of the plants in early spring. In the spring growing season, he irrigates four times: first, after the spring fertilization, to assist in spreading the fertilizer components through the soil; second, about 1 May; third, on or about 20 May; and fourth, at the end of May when the heads are filling out. In 1951, Shih harvested his wheat about the middle of June.

Shih hoes his winter wheat crop twice in the growing season about 20 days apart, and thereafter weeds as necessary. He also planks his field once in early spring to dust mulch the surface.

Shih's good production results can be attributed, in summary, to use of good seed, thicker sowing, more intensive cultivation, and heavier fertilization and irrigation than is common with his neighbors. He has been eager to learn all he can from the Han-ch'eng Hsien experimental farm. If he could substitute modern machine labor for hand labor his production might become still better.

Report on Corn Production of Farmer Yang Fen-ch'eng

(The Office of Food Production of the Ministry of Agriculture of the People's Republic of China conducted an investigation into the high corn production record of Yang Fen-ch'eng of Hsiao-t'uan Ts'un, Chao-yuan Hsien, Shantung, and presents the following data on the factors which contributed to his success in high corn production.)

Since Yang lives in a winter wheat and corn two-crop area, the success of the corn crop depends on rapid action in getting the corn planted after the wheat harvest. There is no time to build up the soil then, so Yang fertilizes heavily for his wheat crop to insure a carry-over of fertility in the soil. For this purpose he applies 8,000 catties of basic fertilizer per mou to his wheat land. During the period of wheat growth he further applies 1,900 catties of a semiliquid fertilizer made of the mash of green beans, a residue remaining after they have been crushed to get out the starch for vermicelli. The mash is mixed with water. This material is rich in nitrogen and contains some phosphorus; 1,900 catties of this mixture are estimated to be the equivalent of 130 catties of dry bean cake.

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Yang specializes in the so-called "big red kernel" type of corn and has been selecting and improving the seed of this variety for a decade. He hybridizes the corn by removing the tassels and pollenizing the ears with pollen from the tassels of other stalks. At an early period, he begins to watch his corn for the best looking stalks and marks them for seed corn. He then chooses the biggest, most shapely ears, and uses only the best kernels from the middle of the ear for seed.

After a decade of selection, Yang has developed a type of corn that grows rapidly and vigorously, matures quickly (107 days), and is suited to the type of soil and rainfall (heavy rain in July and August) in his area. He finds the meal from his corn in good demand in the market.

Yang plants 3,330 hills to a mou, as compared with 2,500 for his neighbors. He has learned by experience that 10 percent of his corn will produce two ears to the stalk. If he has two stalks in the same space that others have one, he will get at least one ear on each stalk and thus be sure of a larger yield on the same area. However, this holds good only when there is sufficient fertilizer and water supply.

Yang applies 2,300 catties of bean mash fertilizer per mou (equivalent to 160 catties of bean cake) when his plants are $1\frac{1}{2}$ inches high by digging a hole between the plants, pouring in the mash mixture, and covering it over. This is the only application of follow-up fertilizer he makes. He has found this method more effective than smaller applications at different times.

Yang's land is sandy irrigated land. If the weather is dry at sowing time, he provides light irrigation the day after sowing to promote sprouting. During the early period of growth only enough water is needed to keep the plants alive. In this way they will strike deeper roots. After the plants are 3 feet high, heavy, frequent irrigation is necessary unless rainfall is ample.

Yang does his first shallow hoeing as soon as the plants are up to eliminate weeds and create a dust mulch of loose soil to slow evaporation. The second hoeing, when the plants are 4 inches high, is deep. The third hoeing, when the plants are 3 feet high, is shallower and is accompanied by hilling the earth around the plants to protect the roots from winds and evaporation.

Thus, by a combination of deep plowing, seed selection, heavy fertilization, close planting, planned cultivation (hoeing), and wise irrigation, Yang has become the high record corn producer of Shantung, with a production of 1,266 catties per mou on 1.54 mou.

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